REMARKS

It is believed that this Amendment is fully responsive to the Office Action dated **November 4, 2002**.

Claims 1-23 are pending in the application.

Claim Rejections under 35 USC §103

Claims 1, 2, 5-7 and 9-23 are rejected under 35 USC §103(a) as being unpatentable over Ouderkirk et al. (U.S. Patent No. 6,124,971) and further in view of Bahadur et al. (*Liquid Crystals, Applications and Uses*, Volume 1).

Claims 3, 4, 8 and 19 are rejected under 35 USC §103(a) as being unpatentable over Ouderkirk in view of Bahadur as applied to claims 1, 2, 5-7 and 9-22, above, and further in view of Hisatake et al. (U.S. Patent No. 5,731,858).

The Office asserts in the Office Action that Bahadur teaches, on pages 462, 463, and 472, the use of a MacNeille prism reflection-type polarizer which transmits linearly polarized light in a direction parallel with a transmission axis, and accordingly it would have been obvious to one having ordinary skill in the art to modify the liquid crystal display of Ouderkirk with this polarizer and a color filter of Bahadur disclosed on pages 180, 242, and 245.

However, the MacNeille prism disclosed in Bahadur is clearly distinguished from a reflection-type polarizing film of Ouderkirk. Bahadur discloses the following on page 462:

> in the second paragraph, the polarizer(s) used in a high-performance projection system is one of the key components of the system, and film (absorptive) polarizers and reflective polarizers such as MacNeille prisms have been used in such

systems;

in the third and fourth paragraph, properties of absorptive polarizers;

in the fifth paragraph, lifetime of film polarizers is a very real concern in high-brightness projection applications due to their absorptive characteristics, which has been the key factor in determining the lifetime of display systems;

in the sixth paragraph, the reflective polarizers have the advantage of not absorbing the light which are based on the fact that light reflected from a surface at certain critical angle is polarized; and

in the bottom paragraph and page 463, explanations of a structure and properties of MacNeille polarizing beamsplitter with reference to figures and mathematical formulae. Briefly, the MacNeille polarizing beamsplitter shown in Figs. 16 and 19 uses the S-polarized light element passing through straight on it's light path for display, and turns the unnecessary P-polarized light element out to askew direction of the light path by means of reflection at the slanted stacking face of the prism. The P- and S-linearly-polarized light elements are orthogonal to each other with their each polarizing direction.

It is obvious from the review of the document above that the most significant concern in these pages in Bahadur is the lifetime of a liquid crystal projector requiring a high-brightness light source. The film polarizer (absorptive polarizer) is ineffective in giving a long lifetime due to absorption of strong illumination light energy about half of which is the energy of unused polarized light element. The specific reasons are not given, however we presume it is because of a chemical action by strong light or extreme temperature rise of the polarizer. On the other hand, the reflective polarizer is effective to turn the unnecessary polarized light element out from the light path and dispose it without damage to the components of the device because the unnecessary polarized light element is reflected from the prism surface.

Consequently, it is evident from the above explanation that the reflective polarizer in Bahadur is for removing the reflected unnecessary polarized light element without being used nor damaged. In contrast, in the present invention, the reflected light from the reflection-type polarizing film is positively used for metallic color display.

Furthermore, the reflective polarizer (prism) in Bahadur includes a slanted reflection surface therein so that the reflective polarizer is rather thick in a direction of light path as shown in Figs. 16 and 19 while the present invention requires a thin display device. In addition, the reflective polarizer in Bahadur merely turns the reflected light out from the light pass and does not use the reflected light, and it does not have a function of returning the reflected light in an incident direction for using of display such as the reflection-type polarizing film in the present invention.

The reflection-type polarizing film in the present invention is film like and its reflection surface is a flat film surface so that the reflection light (polarized light element in a polarizing direction orthogonal to a transmission axis) is necessarily reflected to the light incident side. Accordingly, the present invention can use reflection light to the visible side of incident light, i.e. a color filter can be used for coloring to be observed. Particularly, it is not reasonable that the disclosure of art removing light can be a reference for an invention using light in obviousness type rejection.

Of course, the present invention is also distinguished from an invention relating to a liquid crystal projector using a high-brightness light source.

It is also obvious that Bahadur is not a reference teaching a use of color filter of the present invention in relation to a use of a reflection-type polarizing film capable of using reflection light. The color filter in Bahadur is disclosed only in relation to prior art using a conventional absorption-type polarizing film in combination with a color filter, and Bahadur does not teach or suggest obtaining the bright metallic color display in the present invention when combining with a reflection-type polarizing film. Ouderkirk discloses a structure of

reflection-type polarizing film which does not teach such a display.

As explained in the description, the present invention realizes information display such as bright numbers on a dark background (or display dark numbers on a bright metallic-colored background), by means of using a reflection type-polarizing film which reflects one linearly polarized light to the visible side and returns, and combining the reflection-type polarizing film with various color filters, metallic colored display in many colors mixing RGB and others, and bright color display including metallic color in which colors of a background and numbers are different, which results in obtaining an extreme design effect. Moreover, if required, using environments or display conditions of the display device can be modified by adding a light absorption film, a light scattering film, a transflective film, a back light, and so on.

Conventional absorption-type polarizing films can never achieve bright metallic color display even by combining with a reflection film and a color filter due to absorption loss in making the display dark. Accordingly, the present claim 1 and claim 23 are novel in their structure, along with effects based on the structure, i.e. bright metallic color display, which in itself is inventive. Therefore, even if the Office asserted prior art are combined, the claimed invention would not result.

Reconsideration and withdrawal of these rejections is respectfully requested.

Conclusion

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact Applicant's undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

In the event that this paper is not timely filed, Applicant respectfully petitions for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

ARMSTRONG, WESTERMAN & HATTORI, LLP

Michael N. Lau
Attorney for Applicant
Reg. No. 39,479

MNL/alw
Atty. Docket No. **990345**
Suite 1000
1725 K Street, N.W.
Washington, D.C. 20006
(202) 659-2930

23850
PATENT TRADEMARK OFFICE

H:\HOME\AWEAVER\MLAU\99\990345\05-05-03 Amend